

Amendment to the Claims:

Please cancel claims 26, 31 to 33, 35 and 38 to 44, without prejudice

Please amend the claims as follows:

This listing of claims will replace all prior versions, and listing, of claims in the application:

Listing of Claims:

Claim 1 (Currently Amended): An isolated or recombinant polynucleotide comprising a ~~member selected from the group consisting of:~~

——(a)—— a polynucleotide having at least [[a]] 70% sequence identity to a polynucleotide encoding an enzyme comprising ~~the~~ an amino acid sequence set forth in SEQ ID NO:4 and having alpha galactosidase activity; ~~and~~

——(b)—— a polynucleotide that is completely complementary to a polynucleotide of (a).

43  
Claim 2 (Currently Amended): The polynucleotide of claim 1, wherein the polynucleotide is comprises a DNA.

Ⓢ  
Claim 3 (Currently Amended): The polynucleotide of claim 1, wherein the polynucleotide is comprises an RNA.

Claim 4 (Previously Amended): The polynucleotide of claim 2, which encodes an enzyme comprising amino acids 1 to 346 of SEQ ID NO:4.

Claim 5 (Currently Amended): An isolated or recombinant polynucleotide comprising a ~~member selected from the group consisting of:~~

——(a)—— a polynucleotide having at least a 90% identity to a polynucleotide encoding an enzyme having a sequence as set forth in SEQ ID NO:4 and having alpha galactosidase activity; ~~and~~

——(b)—— a polynucleotide ~~complementary to a polynucleotide of (a).~~

Claim 6 (Currently Amended): A vector comprising the ~~DNA of claim 2~~  
polynucleotide of claim 1.

Claim 7 (Currently Amended): A host cell comprising the vector of claim ~~13~~ 6.

Claim 8 (Currently Amended): A process for producing a polypeptide  
comprising expressing from the host cell of claim ~~14~~ 7 a polypeptide encoded by said DNA, or  
expressing from a host cell the polynucleotide of claim 1.

Claim 9 (Previously presented): A process for producing a cell that expresses the  
polypeptide encoded by a DNA contained in a vector comprising transforming or transfecting the  
cell with the vector of claim 6.

Claims 10 to 12 (Canceled)

33  
Claim 13 (Currently Amended): The polynucleotide of claim 1, wherein the  
polynucleotide has at least 95% identity to ~~[[a]] the polynucleotide encoding the amino acid~~  
~~sequence set forth in SEQ ID NO:4 and encodes a protein having alpha-galactosidase activity.~~

Claim 14 (Currently Amended): The polynucleotide of claim 13, wherein the  
polynucleotide has at least 97% identity to ~~[[a]] the polynucleotide encoding an alpha~~  
~~galactosidase comprising the amino acid sequence set forth in SEQ ID NO:4.~~

Claims 15-16 (Canceled)

Claim 17 (Previously presented): The polynucleotide of claim 2, wherein the  
DNA is cDNA or synthetic DNA.

Claim 18 (Previously presented): The polynucleotide of claim 2, wherein the  
DNA is single stranded.

Claim 19 (Currently Amended): The polynucleotide of claim 18, wherein the single stranded DNA ~~[[is]]~~ comprises a coding sequence of a polypeptide having alpha galactosidase activity.

Claim 20 (Previously presented): The vector of claim 6, wherein the DNA is operably linked to an expression control sequence suitable to direct mRNA synthesis.

Claim 21 (Currently Amended): The vector of claim 6, wherein the vector is comprises a plasmid, a viral particle, or a phage.

Claim 22 (Currently Amended): The vector of claim 6, wherein the vector is comprises an expression vector.

Claim 23 (Previously presented): The polynucleotide of claim 2, operably linked to an expression control sequence.

13  
Claim 24 (Currently Amended): An isolated or recombinant polynucleotide that hybridizes to a polynucleotide that encodes a polypeptide having a sequence as set forth in SEQ ID NO:4, or a complement thereof, and wherein the polypeptide has alpha galactosidase activity, and the hybridizing conditions include 0.9 M NaCl, 50 mM NaH<sub>2</sub>PO<sub>4</sub>, pH 7.0, 5.0 mM Na<sub>2</sub>EDTA, 0.5% SDS, 10x Denhardt's, and 0.5 mg/mL polyriboadenylic acid at 45°C.

Claim 25 (Currently Amended): The isolated or recombinant polynucleotide of claim 24, wherein the polynucleotide that encodes SEQ ID NO:4 comprises SEQ ID NOS:1, 2, or 3.

Claim 26 (Canceled)

Claim 27 (Currently Amended): The isolated or recombinant polynucleotide of claim 24, wherein the polynucleotides hybridize under conditions further comprising a wash step of 1X SET (150 mM NaCl, 20 mM Tris hydrochloride, pH 7.8, 1 mM Na<sub>2</sub>EDTA) containing 0.5% SDS at room temperature.

Claim 28 (Currently Amended): The isolated or recombinant polynucleotide of claim ~~27~~24, wherein the wash step further comprises another wash in fresh 1X SET at T<sub>m</sub>-10°C, wherein T<sub>m</sub> is a melting temperature for hybridized polynucleotides.

Claim 29 (Currently Amended): An isolated or recombinant nucleic acid ~~fragment~~ comprising ~~a nucleic acid sequence of a portion~~ at least 12 contiguous nucleotides of the isolated polynucleotide of claim 1 or claim 24 ~~claims 1, 5, or 24, wherein the fragment~~ encodes a polynucleotide having alpha galactosidase activity.

33  
Claim 30 (Currently Amended): An isolated or recombinant nucleic acid ~~fragment~~ comprising ~~a nucleic acid sequence of a portion~~ at least 12 contiguous nucleotides of a polynucleotide encoding SEQ ID NO:4, ~~wherein the fragment encodes a polypeptide having~~ alpha galactosidase activity.

Claims 31 to 33 (Canceled)

Claim 34 (Currently Amended): An isolated or recombinant nucleic acid ~~fragment~~ consisting of ~~a nucleic acid sequence that is a portion~~ at least 12 contiguous nucleotides of a polynucleotide encoding SEQ ID NO:4 set forth in SEQ ID NOS:1, 2, or 3, and wherein the isolated or recombinant nucleic acid comprises one of a pair of primers ~~capable of identifying~~ capable of amplifying a polynucleotide encoding a polypeptide having alpha galactosidase activity or is capable of hybridizing to a nucleic acid encoding a polypeptide having alpha galactosidase activity under conditions including 0.9 M NaCl, 50 mM NaH<sub>2</sub>PO<sub>4</sub>, pH 7.0, 5.0 mM Na<sub>2</sub>EDTA, 0.5% SDS, 10x Denhardt's, and 0.5 mg/mL polyriboadenylic acid at 45°C and a

wash step of 1X SET (150 mM NaCl, 20 mM Tris hydrochloride, pH 7.8, 1 mM Na<sub>2</sub>EDTA) containing 0.5% SDS at room temperature.

Claim 35 (Canceled)

Claim 36 (Currently Amended) The isolated or recombinant nucleic acid ~~fragment~~ of claim 29, claim 30 or claim 34, wherein the sequence is at least 30 bases.

Claim 37 (Currently Amended) The isolated or recombinant nucleic acid ~~fragment~~ of claim 36 29, wherein the sequence is at least 50 bases.

Claims 38 to 41 (Canceled)

Claim 42 (Currently Amended) A polynucleotide probe comprising the isolated or recombinant nucleic acid ~~fragment~~ of claim 29.

33  
Claim 43 (Currently Amended) A polynucleotide probe comprising the isolated or recombinant nucleic acid ~~fragment~~ of claim 30.

Claim 44 (Currently Amended) A polynucleotide probe comprising the isolated or recombinant nucleic acid ~~fragment~~ of claim ~~31~~ 34.

Claim 45 (Currently Amended) A polynucleotide probe comprising ~~the~~ a nucleic acid comprising a fragment of any one of the isolated or recombinant nucleic acid as set forth in claim ~~claims~~ 32- 34.

Claim 46 (NEW) An isolated or recombinant nucleic acid completely complementary to a nucleic acid having at least a 70% sequence identity to a nucleic acid encoding a polypeptide comprising an amino acid sequence set forth in SEQ ID NO:4 and having alpha galactosidase activity.

Claim 47 (NEW) The isolated or recombinant nucleic acid of claim 46, wherein the isolated or recombinant nucleic acid is completely complementary to a nucleic acid having at least a 80% sequence identity to a nucleic acid encoding a polypeptide comprising an amino acid sequence set forth in SEQ ID NO:4 and having alpha galactosidase activity.

Claim 48 (NEW) The isolated or recombinant nucleic acid of claim 47, wherein the isolated or recombinant nucleic acid is completely complementary to a nucleic acid having at least a 90% sequence identity to a nucleic acid encoding a polypeptide comprising an amino acid sequence set forth in SEQ ID NO:4 and having alpha galactosidase activity.

Claim 49 (NEW) The isolated or recombinant nucleic acid of claim 48, wherein the isolated or recombinant nucleic acid is completely complementary to a nucleic acid having at least a 95% sequence identity to a nucleic acid encoding a polypeptide comprising an amino acid sequence set forth in SEQ ID NO:4 and having alpha galactosidase activity.

43  
Claim 50 (NEW) The isolated or recombinant nucleic acid of claim 49, wherein the isolated or recombinant nucleic acid is completely complementary to a nucleic acid having at least a 97% sequence identity to a nucleic acid encoding a polypeptide comprising an amino acid sequence set forth in SEQ ID NO:4 and having alpha galactosidase activity.

Claim 51 (NEW) An isolated or recombinant nucleic acid comprising a sequence of at least 12 contiguous nucleotides of a complementary strand of an isolated polynucleotide as set forth in claim 1.

Claim 52 (NEW) An isolated or recombinant nucleic acid comprising a sequence of at least 12 contiguous nucleotides of a complementary strand of a polynucleotide encoding SEQ ID NO:4.

Claim 53 (NEW) The isolated or recombinant nucleic acid of claim 51 or claim 52, wherein the isolated or recombinant nucleic acid comprises a sequence of at least 15 nucleotides.

Claim 54 (NEW) The isolated or recombinant nucleic acid of claim 53, wherein the isolated or recombinant nucleic acid comprises a sequence of at least 30 nucleotides.

Claim 55 (NEW) The isolated or recombinant nucleic acid of claim 54, wherein the isolated or recombinant nucleic acid comprises a sequence of at least 50 nucleotides.

Claim 56 (NEW) The isolated or recombinant nucleic acid of claim 51 or claim 52, wherein the sequence comprises a sense strand or an antisense strand.

33  
Claim 57 (NEW) The isolated or recombinant polynucleotide of claim 1, wherein the isolated or recombinant polynucleotide has at least a 80% sequence identity to a nucleic acid encoding an enzyme comprising an amino acid sequence set forth in SEQ ID NO:4 and having alpha galactosidase activity.

Claim 58 (NEW): The isolated or recombinant polynucleotide of claim 1, wherein the alpha galactosidase activity comprises hydrolysis of raffinose, stachyose or verbascose.

Claim 59 (NEW): The isolated or recombinant polynucleotide of claim 58, wherein the alpha galactosidase activity comprises hydrolysis of raffinose, stachyose or verbascose in beans.

Claim 60 (NEW): The isolated or recombinant nucleic acid of claim 1, wherein the polynucleotide comprises a sense sequence or an antisense sequence.

Claim 61 (NEW): The polynucleotide of claim 18, wherein the single stranded DNA comprises an antisense sequence.

Claim 62 (NEW): The isolated or recombinant nucleic acid fragment of claim 29, claim 30 or claim 34, wherein the sequence is at least 15 bases.

Claim 63 (NEW): An isolated or recombinant polynucleotide comprising a polynucleotide encoding polypeptide having a sequence as set forth in SEQ ID NO:4.

Claim 64 (NEW): The host cell of claim 7, wherein the cell is a bacterial cell, a fungal cell, a yeast cell, an insect cell, a plant cell or an animal cell.

Claim 65 (NEW): The host cell of claim 64, wherein the animal cell is a mammalian cell.

33  
Claim 66 (NEW): The isolated or recombinant polynucleotide of claim 1, wherein the polynucleotide has at least a 95% sequence identity to the polynucleotide encoding the enzyme.

Claim 67 (NEW): The isolated or recombinant polynucleotide of claim 1, wherein the polynucleotide has at least a 97% sequence identity to the polynucleotide encoding the enzyme.

---